©2005

RGNOS® ® ® Red-Giant 锐律®

NBR

NBR

RG-NBRxxx NBRxxx

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Terminal Display Terminal Display Courier New
8.5

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..... 1
1.1 NBR 1
1.1.1 NBR200 1
1.1.2 NBR1000E .....
1.1.3 NBR300 .....
1.1.4 NBR1200 .....
1.1.5 NBR2000 .....
1.2 2
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1.2.2 3
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6.10.2 .....
6.11 MAC/IP .....
6.11.1 MAC/IP .....
..... 101
7.1 ROM 104
7.1.1 ROM 104
7.1.2 ROM 104

(× ×)	44.4mm × 437mm × 210mm
	AC: 176~265V 47/53Hz
	20W
	0~40
	10~90%

SDRAM FLASH

1.1.1.3 NBR200

STATUS	
LINK/ACT	
100M	100M 10M
Reset	5 5

	AC: 176~265V 47/53Hz
	20W
	0~40
	10~90%

SDRAM FLASH

1.2

1.2.1

- RJ45 ARP
- TCP/IP IP ICMP IGMP TCP UDP
- IP RIP(V1/V2)
- SNMP
- TELNET
- DHCP Relay
- PPPoE
- X-MODEM
- NAT
- TFTP

1.2.2

-
-

1.2.3

- DEBUG
-
-
  a) Console
  b) TELNET
  c) TFTP

1.2.4

- IP
- PPP PAP CHAP
- MAC
- NAT

1.2.5

- X-MODEM (Windows 95 Windows NT UNIX DOS) Console

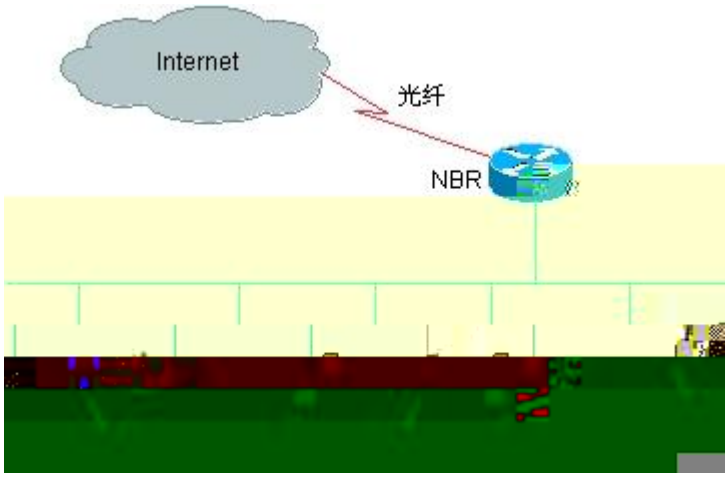
- TFTP
- BOOTROM

1.3

- **NBR**

NBR NBR200,NBR1000E

1-4



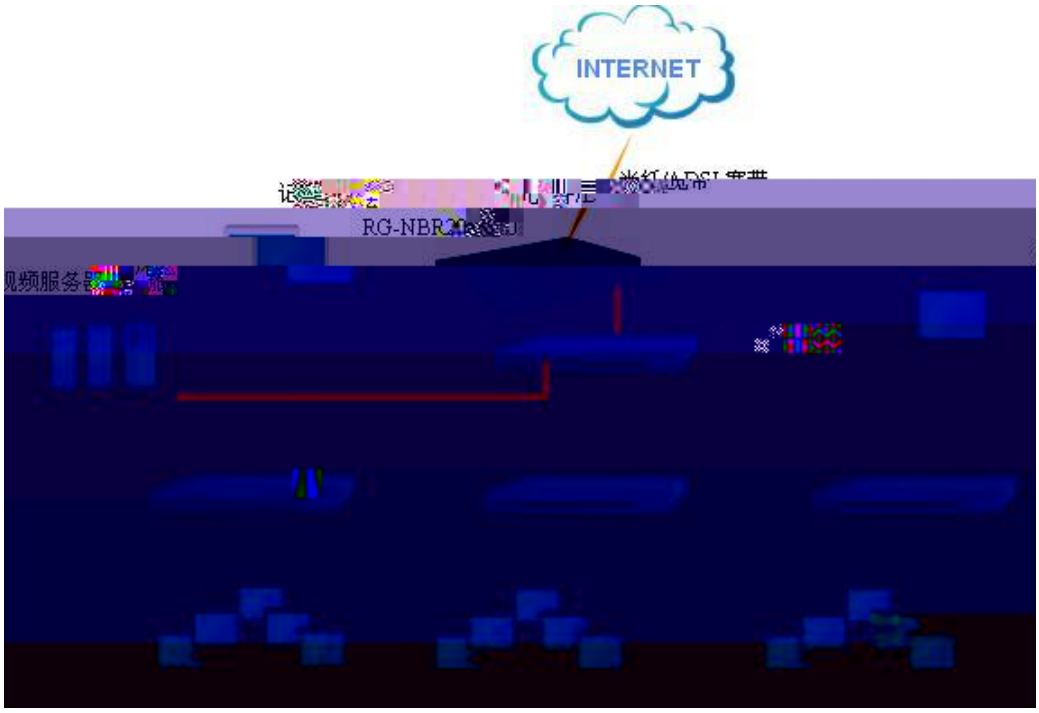
1-11 NBR

NBR Internet

1

2

3 DDOS



1000M 100M 200
2 3 2 NBR2000 2 3
3 3 3 3

1
2 100M
3
4 DDOS

-

NBR

2.1

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-

-
- UPS

2.2

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-
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2.2.1 /

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1.5m

0.4m

48 15

5

2.2.2

(m)	0.5	1	3	5
( )	1.4×10^{7}	7×10^{5}	2.4×10^{5}	1.3×10^{5}

SO_2 H_2S NO_2 NH_3 Cl_2

	mg/m^3	mg/m^3
SO_2	0.2	1.5
H_2S	0	0.03
NO_2	0.04	0.15
NH_3	0.05	0.15
Cl_2	0.01	0.3

2.2.3

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●

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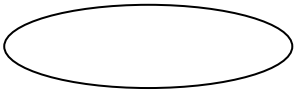
-

- HUB
- (Windows PC)
-

3.1



3.2

-
-

3.2.1

3.2.2

-
-
  10cm
-

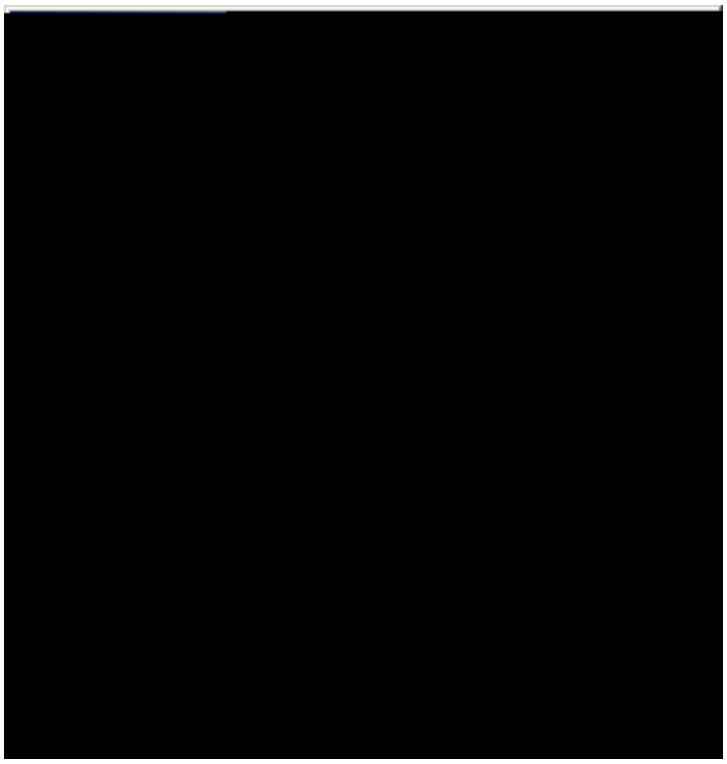
3.3

AC: 176~264V 50/60Hz

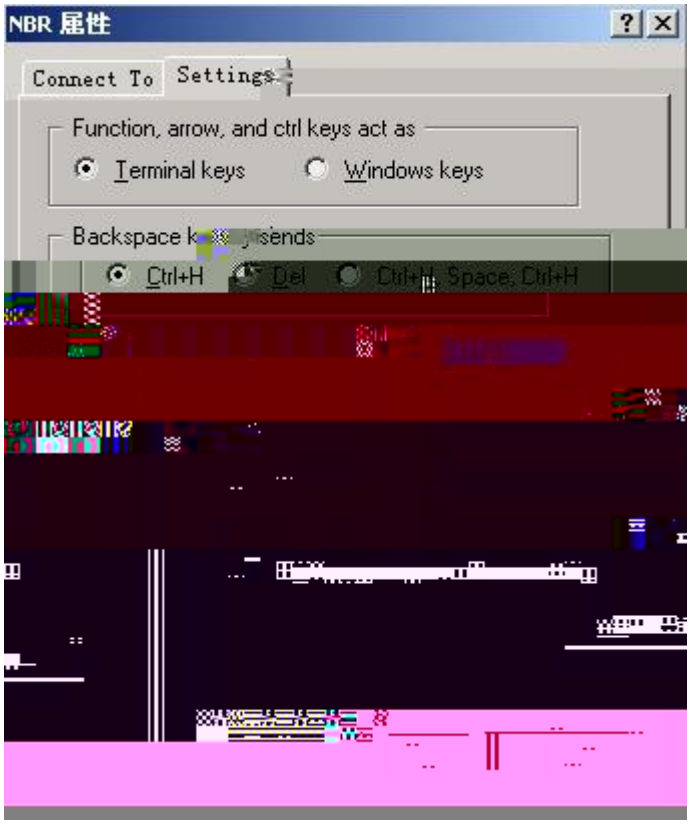
3.4

EIA/TIA-232 Console
WEB

NBR



4-4


NBR 属性
Connect To
Settings
Function, arrow, and ctrl keys act as
Terminal keys
Windows keys
Backspace k sends
Ctrl+H
Del
Ctrl+H
Space, Ctrl+H

4-5

```
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!
Red-Giant Operating System Software
RGNOS (tm) RELEASE SOFTWARE, Version 8.1(a2) building 2
Copyright (c) 2004 by Red-Giant Network co.,Ltd
Compiled Jun 24 2004 10:01:37 by jiangzy

Red-Giant NBR1000 series NBR1000
Motorola Power PC processor with 16384K bytes of memory.
Processor board ID 00000001,with hardware revision 00000001

SDRAM: 16M
       Bank0: 00000000 - 00FFFFFF  16M

System power off accidentally last.
Parallel FLASH ID: 0000010F
       Size :512 KB
Serial FLASH ID: 0000ECE6
       Size :8192 KB
Init nand flash device information for NBR1000.

MII not found.

                pci information in the system
             =====================================
slot|seq|bus|int|dev|fun  start    end     config   devid   fbtb  name
 00  00  00  01  21  00  80001000 80001fff 8000a800 0020100b  1   Ethernet
 01  00  00  00  20  00  80000000 80000fff 8000a000 0020100b  1   Ethernet

                card information in the system
             =====================================
slot     class id     type id      hardware ver  firmware version
slot 0    main board    MB_M8241_NBR  1.0         1.0

%INK CHANGED: Interface FastEthernet 0/0, changed state to up
%INE PROTOCOL CHANGE: Interface FastEthernet 0/0, changed state to UP
```

enable

admin

```
NBR >
NBR >enable
Password:                       <=
NBR#
```

setup NBR

4.1.5 Setup

setup *setup*

setup WAN0

IP WAN1 PPPoE

```
NBR#

       ------------             ----------------

    ctrl-c                        '[]'

         :
                                                  :nbr
                                 :aaa
     telnet                             :bbb

        internet   WAN  :
  0. WAN 0
  1. WAN 1
       (0 - 1):0

          :
  1.    IP
  2. PPPoE
  3. DHCP    IP
       (1 - 2):1
     WAN    IP:202.101.1.1
     WAN          :255.255.255.0
           IP    :202.101.1.254
ISP                        [no]:yes
               :202.101.1.1
               :202.101.1.3
        WAN            [yes]:


           (1.    DNS    ;2.    ping    ):1
             IP    :202.101.98.55
     ISP              Kbits  (1-1000000):10000

             WAN  [no]:yes

        internet   WAN  :
  0. WAN 0
  1. WAN 1
       (0 - 1):1

          :
  1.    IP
  2. PPPoE
  3. DHCP    IP
       (1 - 2):2
```

```
PPPoE       :user
PPPoE      :user
ISP              Kbits  (1-1000000):500
```

NBR *Setup*

NBR RGNOS CD-ROM

RGNOS

RGNOS

www.ruijie.com.cn

4.2 Web

Web Web

CD-ROM

4.2.1 Web

IP

Web IP

192.168.1.1 admin admin

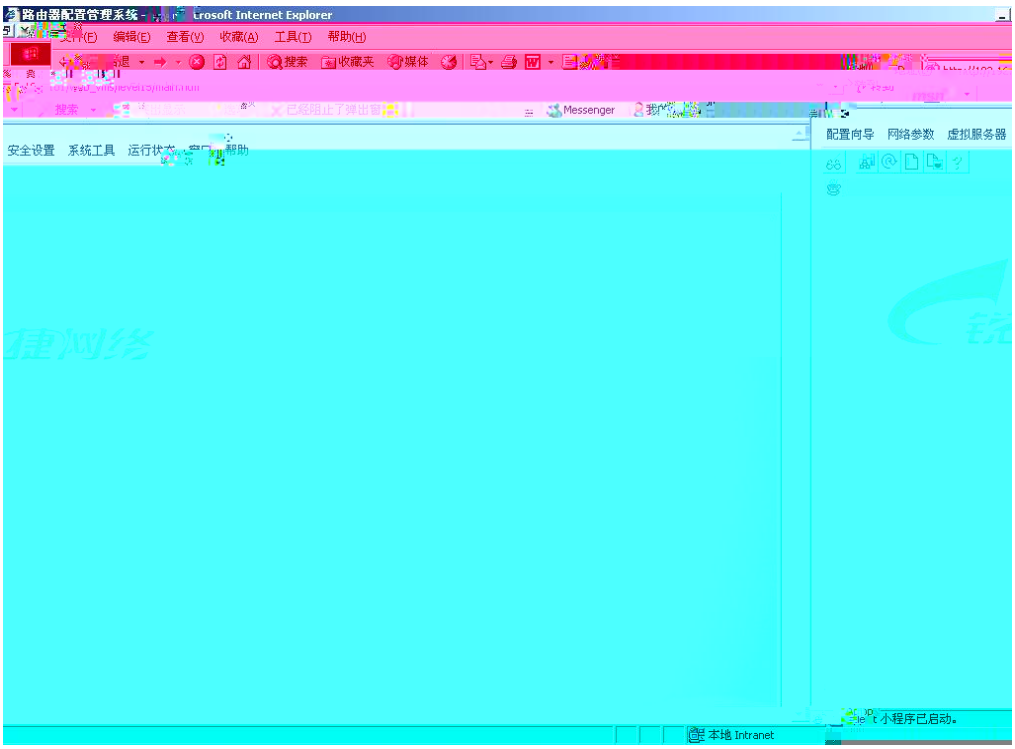
PC IP IP

web java windows java

java www.sun.com jre ,

windows jre 1˚ ע

NBR



2

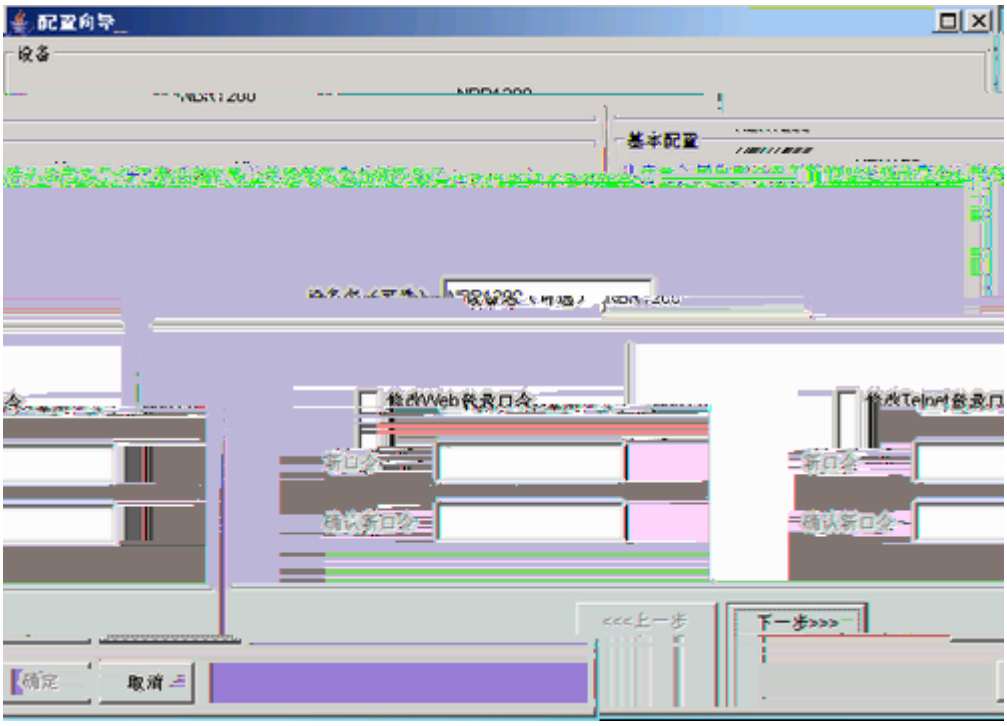
4.2.3

4.2.3.1

“ / ”

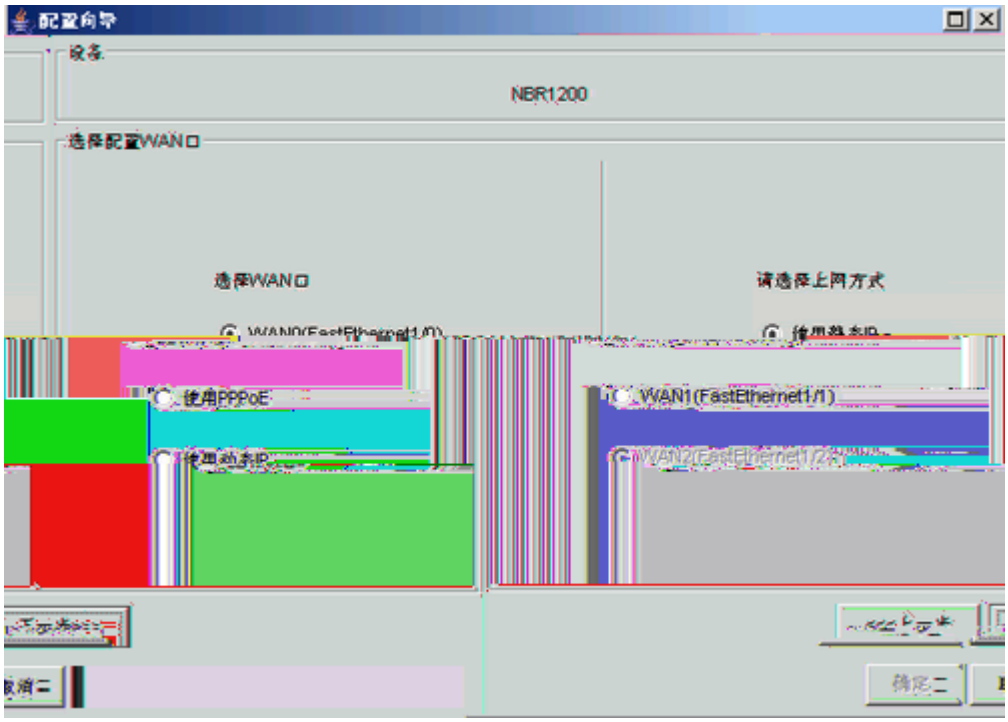
NBR

setup



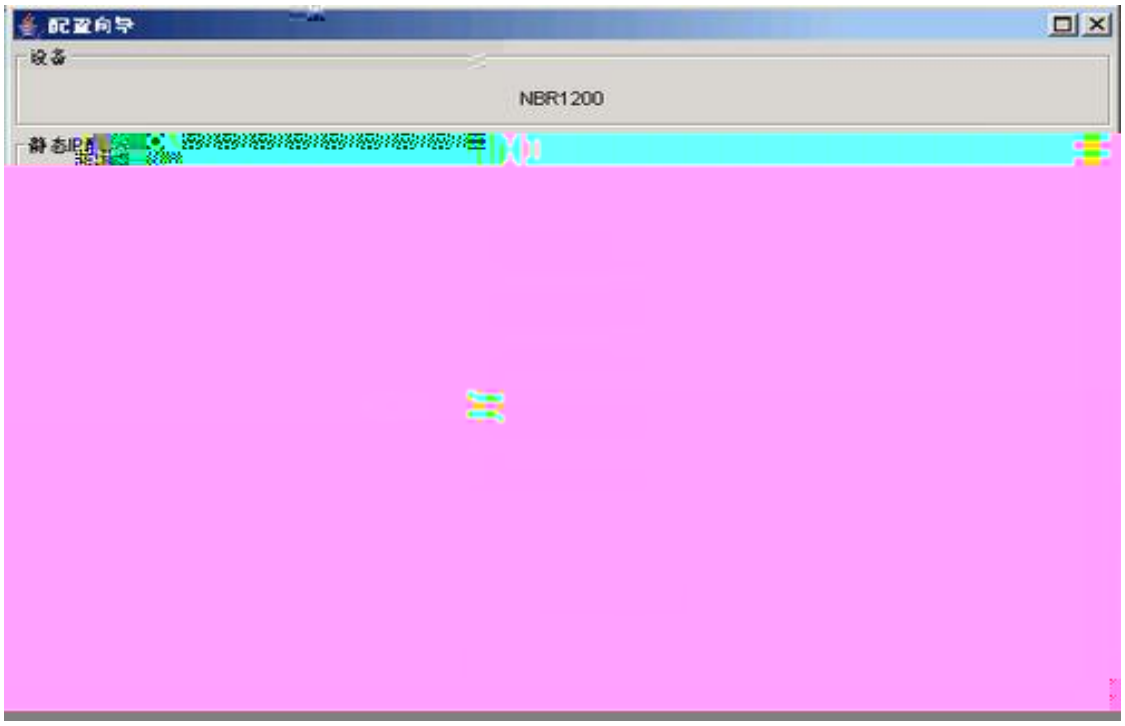
:

- NBR NBR1200
- **web** web



WAN :

- **WAN** WAN0 WAN1 WAN2 NBR200/NBR300 WAN0 NBR WAN0 GigabitEthernet 0/1 WAN1 FastEthernet 0/2
- IP PPPOE IP
- IP “ ” IP “ ” PPPOE



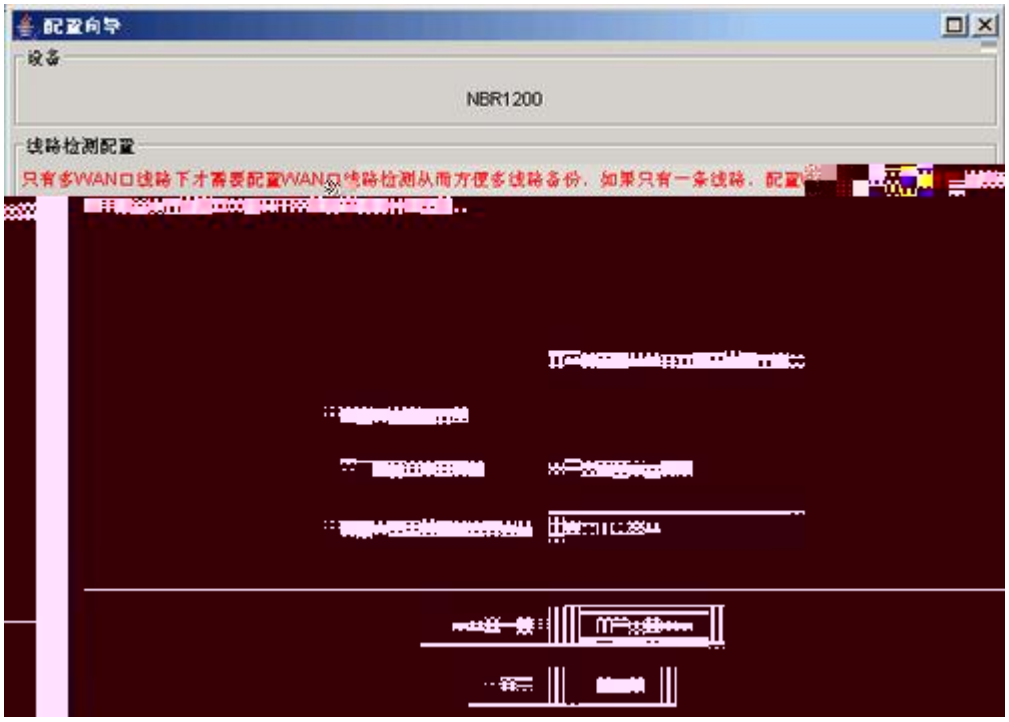
IP:

- **IP** **:** IP ISP IP
- **:** ISP
  255.255.255.0
- **:** ISP

ISP

ISP IP “ ”

- **IP** ISP
- **IP** ISP



IP

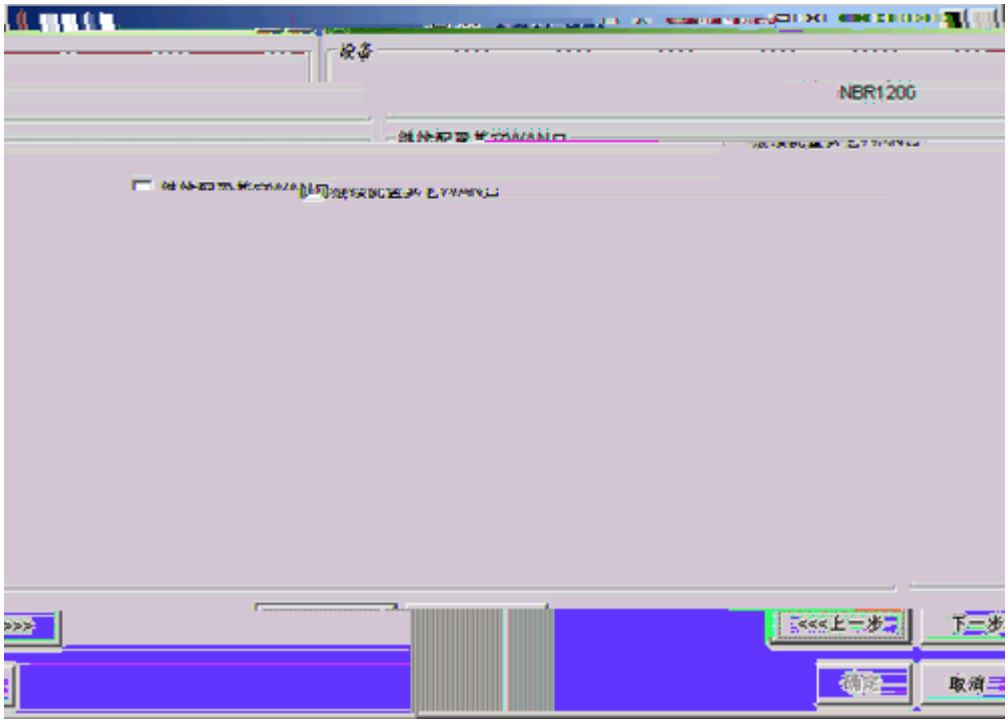
wan **wan**

wan

- DNS DNS
  ping ISP
  ping
- **IP** DNS ping IP

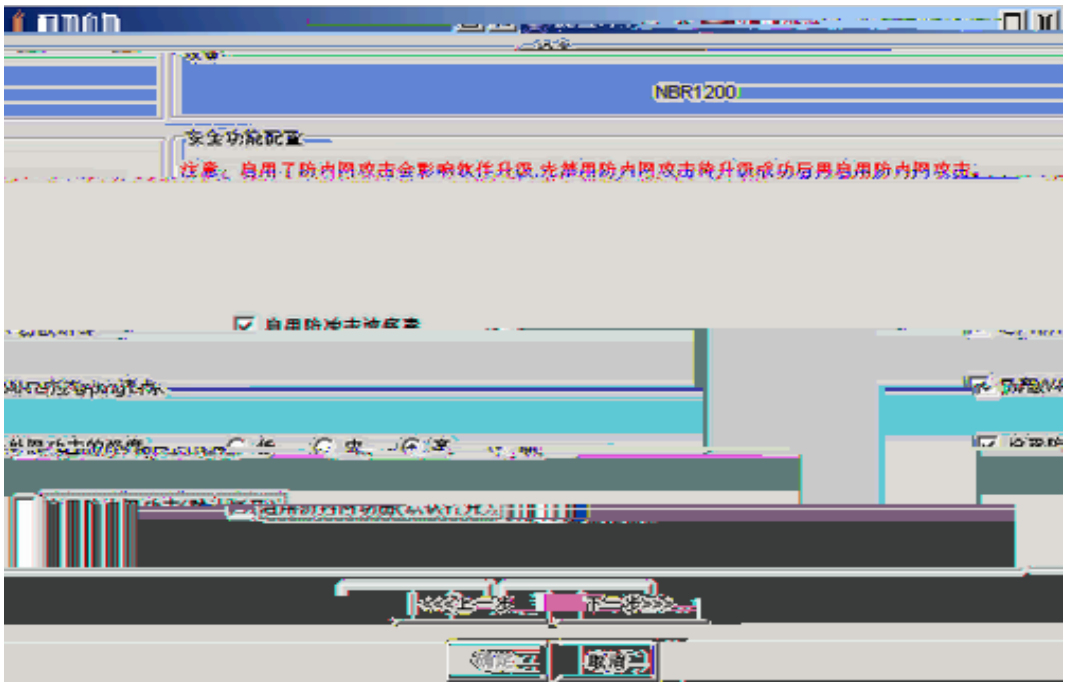
PPPOE pppoe

- ISP
- ISP
- **ISP** ISP
- **:** ε ş



wan

WAN



DOS

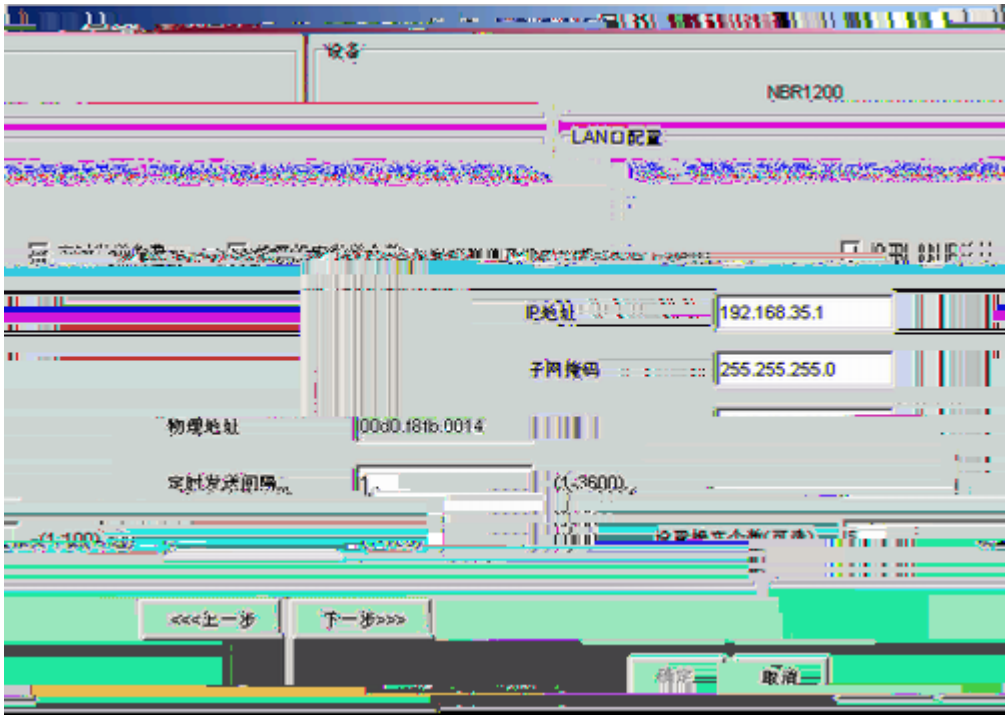
- UDP

- **WAN** **ping** ping
  ping
- DOS
-

NBR

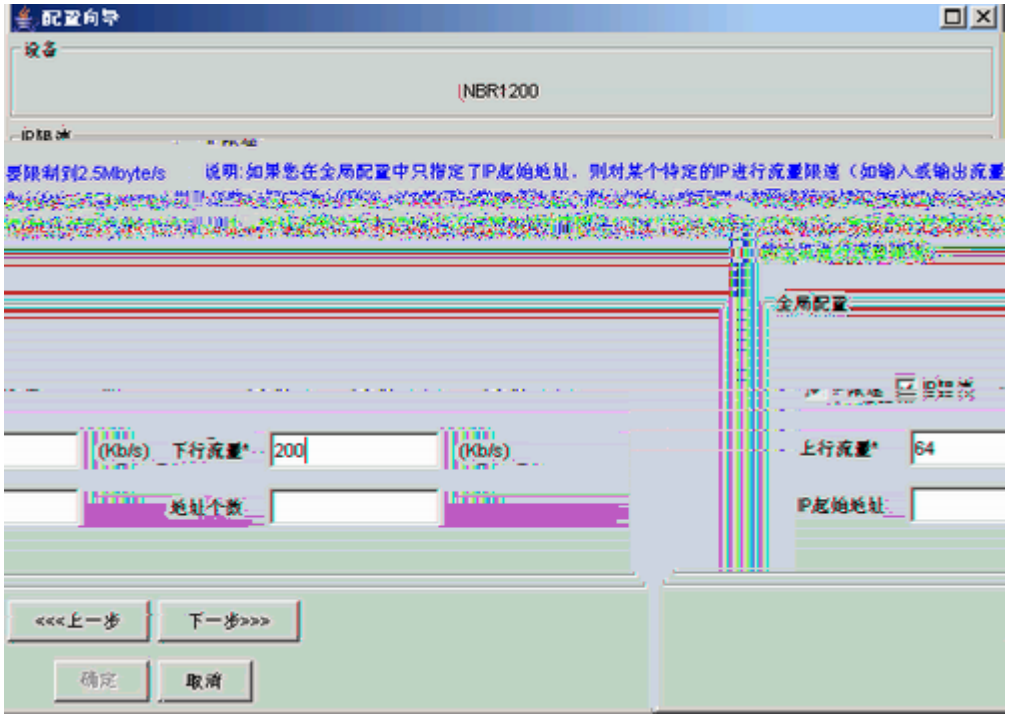
: 3 lan

- lan
- ( )
  ( ) ( )



LAN

- **IP** LAN IP IP 192.168.1.1 IP IP IP
- LAN IP
- **ARP** ARP ARP 1
- ARP 1 5

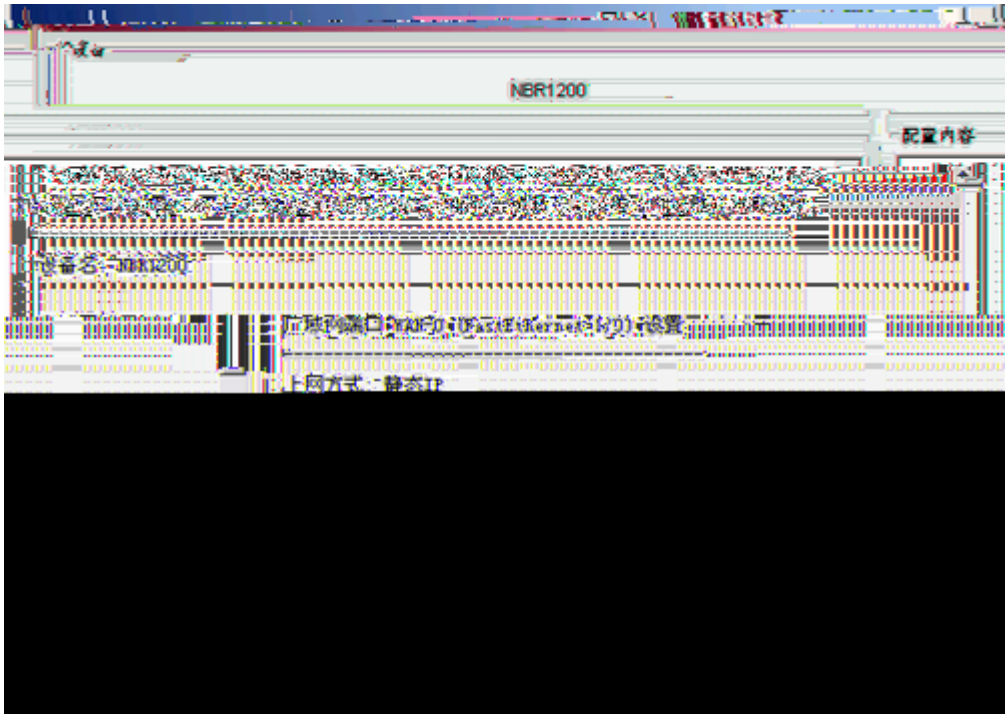


BT P2P IP

64kbyte/s 200kbyte/s

IP

“ ”



“ ”

“ ”

4.2.3.2

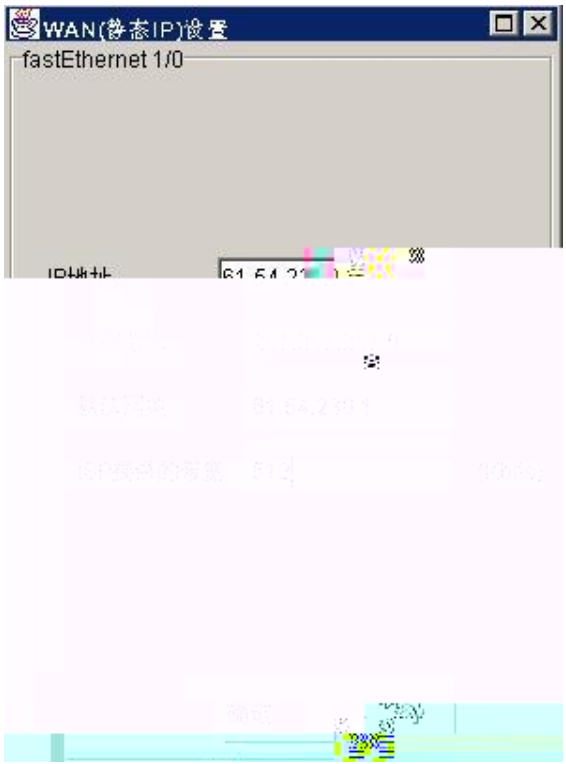
“ / ”

网络
设备
NBR1000
LAN设置
WAN设置
IP地址
192.168.200.111
子网掩码
255.255.255.0
取消
刷新

WAN0 WAN1 IP PPPOE IP

WAN0 fastethernet 1/0 WAN1 fastethernet 1/1

“ ” WAN



WAN IP “ ” “ IP ”

NBR

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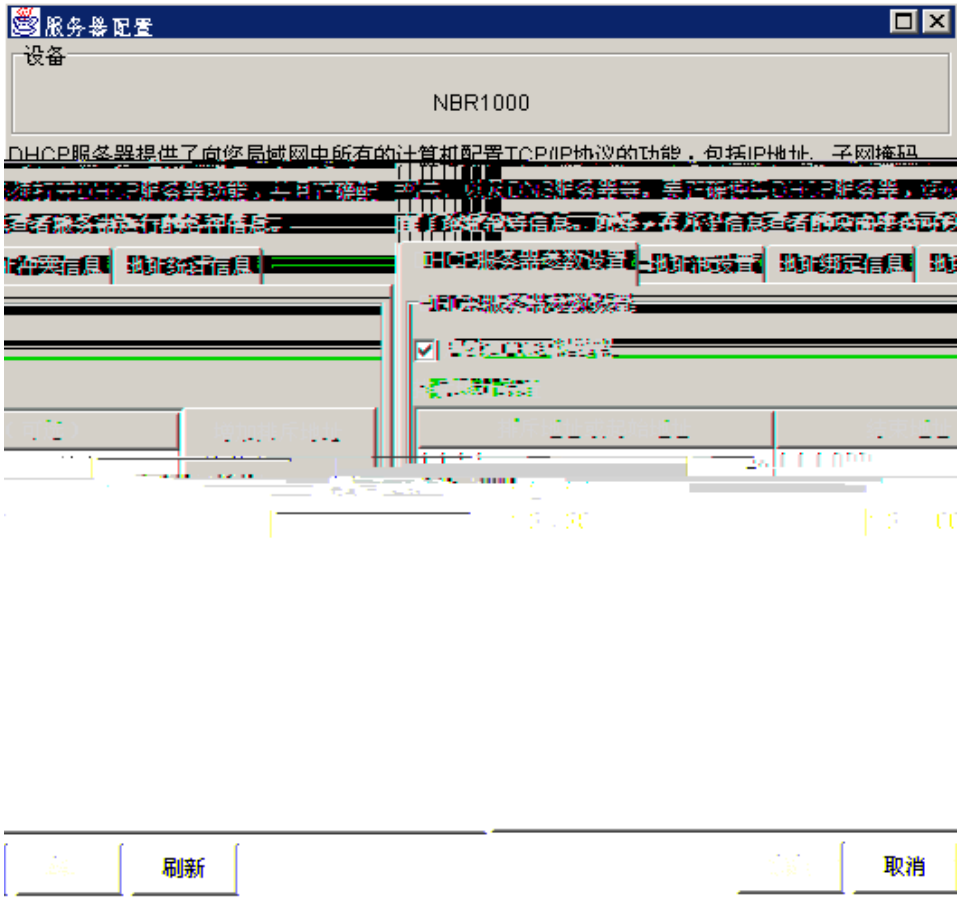
4.2.3.4

“ / / ”

“ ”

NBR

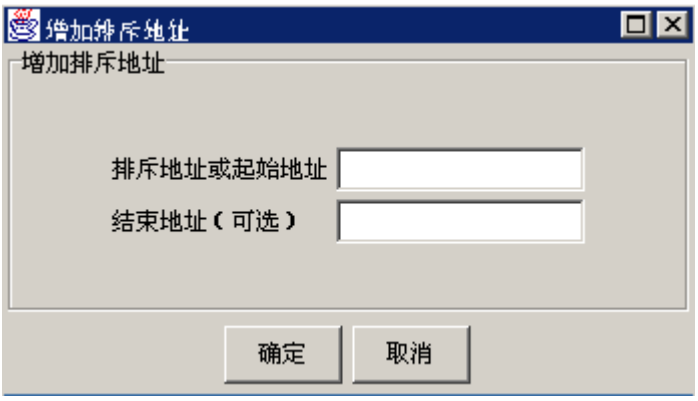


DHCP DHCP TCP/IP

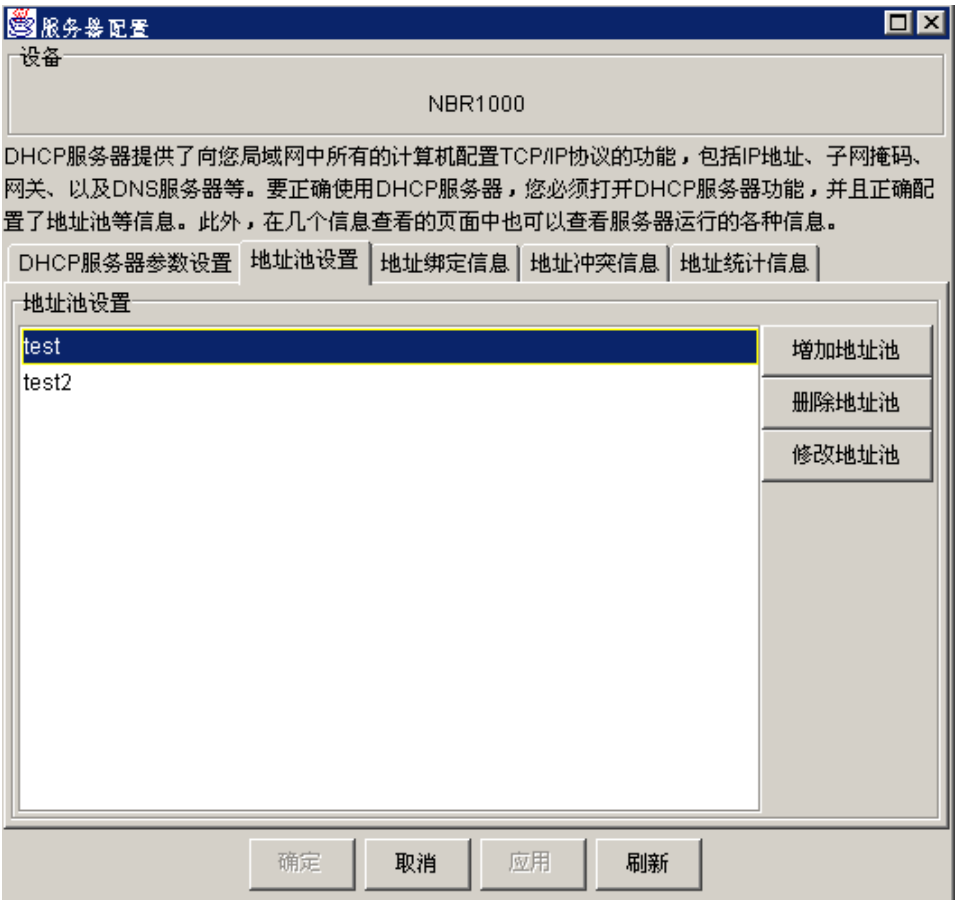
IP DNS

-

IP*

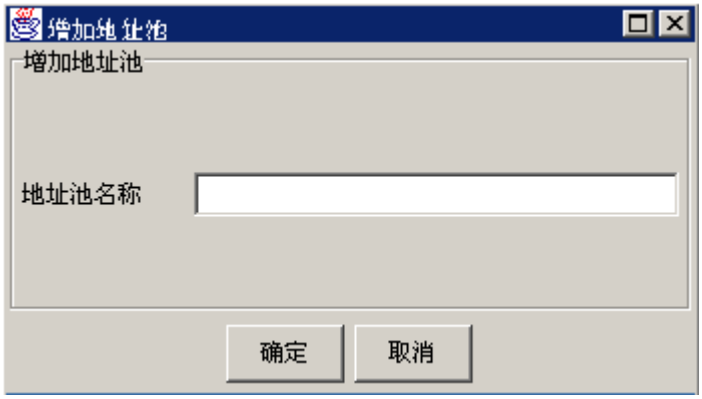

增加排斥地址
增加排斥地址
排斥地址或起始地址
结束地址（可选）
确定
取消

-
-
- “ ”

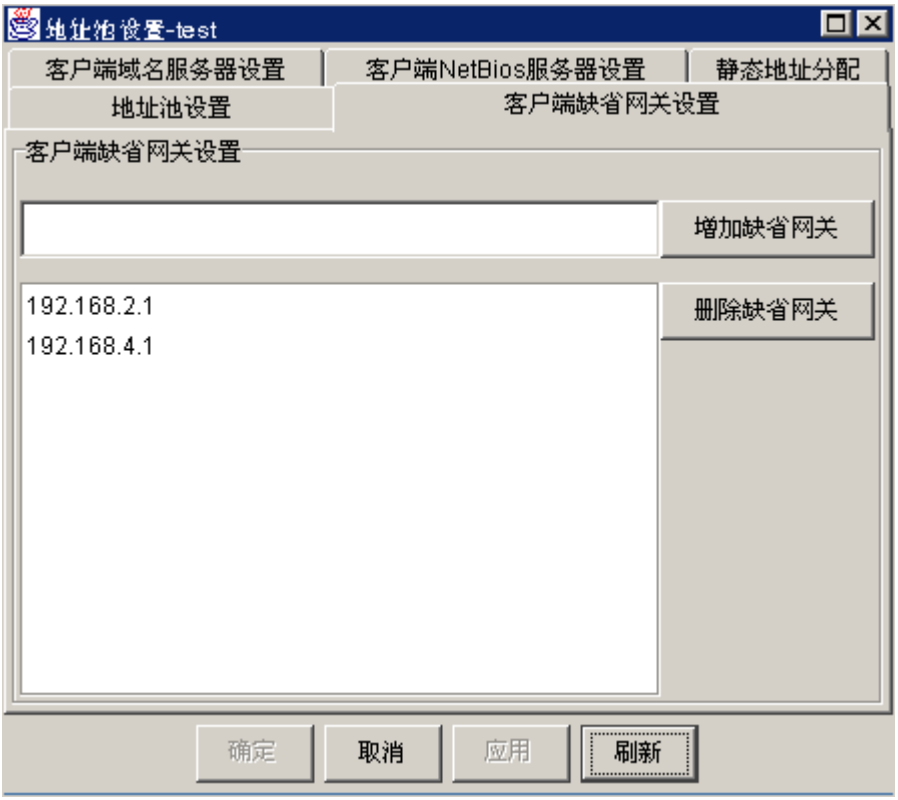

服务器配置
设备
NBR1000
DHCP服务器提供了向您局域网中所有的计算机配置TCP/IP协议的功能，包括IP地址、子网掩码、网关、以及DNS服务器等。要正确使用DHCP服务器，您必须打开DHCP服务器功能，并且正确配置了地址池等信息。此外，在几个信息查看的页面中也可以查看服务器运行的各种信息。
DHCP服务器参数设置
地址池设置
地址绑定信息
地址冲突信息
地址统计信息
地址池设置
test
test2
增加地址池
删除地址池
修改地址池
确定
取消
应用
刷新

DHCP

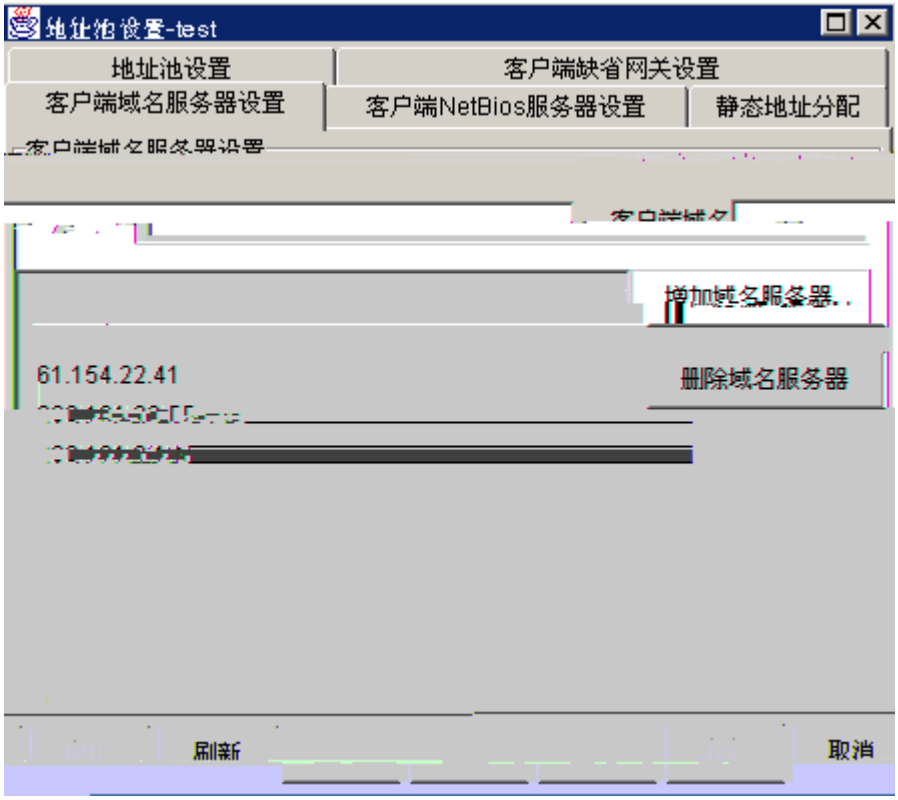
-
-
-
- “ ”

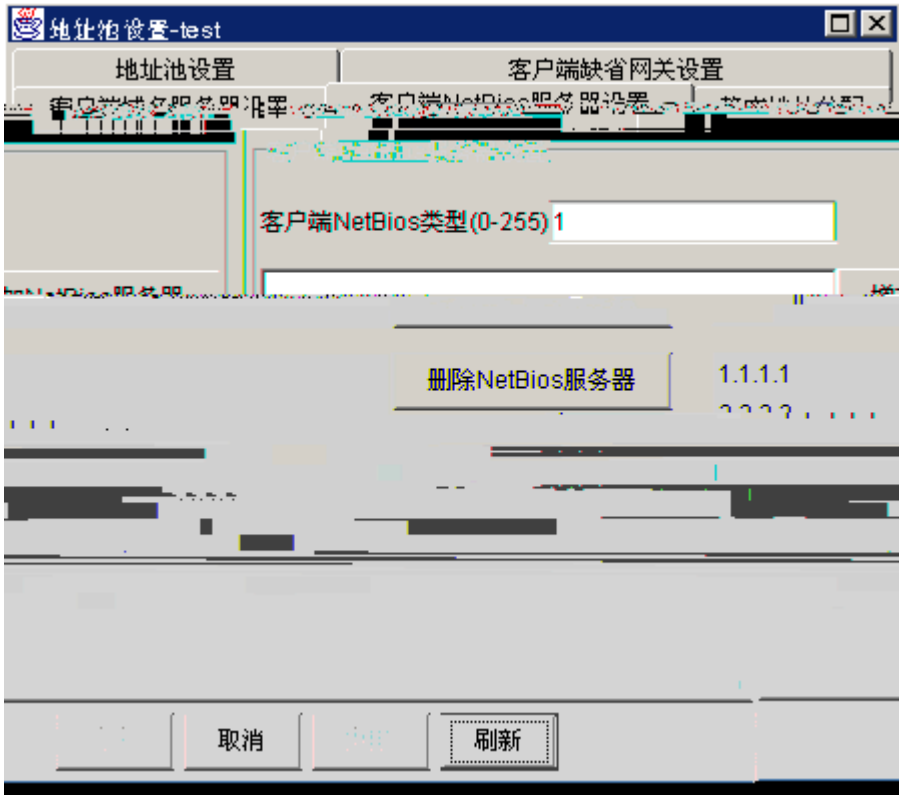

增加地址池
增加地址池
地址池名称
确定
取消

-
- “ ”


地址池设置-test
客户端域名服务器设置
客户端NetBios服务器设置
静态地址分配
地址池设置
客户端缺省网关设置
客户端缺省网关设置
增加缺省网关
192.168.2.1
192.168.4.1
删除缺省网关
确定
取消
应用
刷新

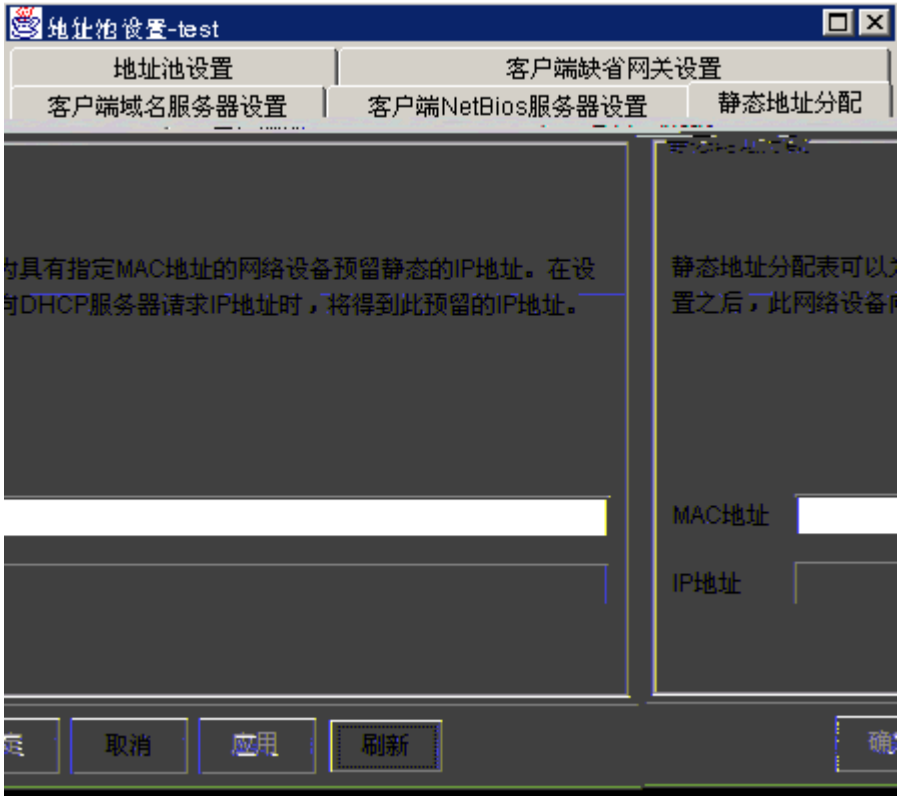
-
-
- “ ”


地址池设置-test
地址池设置
客户端缺省网关设置
客户端域名服务器设置
客户端NetBios服务器设置
静态地址分配
增加域名服务器...
61.154.22.41
删除域名服务器
刷新
取消



NetBios NetBios NetBios NetBios NetBios

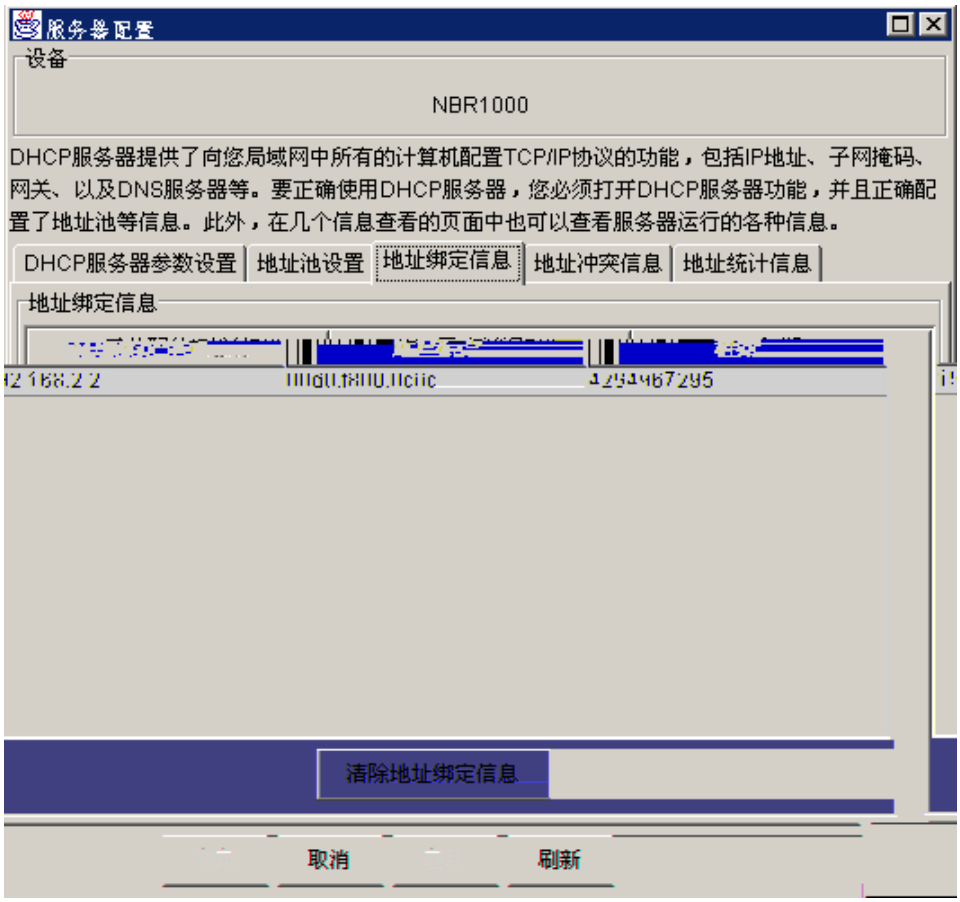
- **NetBios** NetBios 0 255
- **NetBios** NetBios NetBios
- **NetBios** NetBios NetBios
- “ ” NetBios
- “ ” NetBios



MAC IP

/

- **MAC** MAC
- **IP** MAC IP
- “ ”
- “ ”


服务器配置
设备
NBR1000
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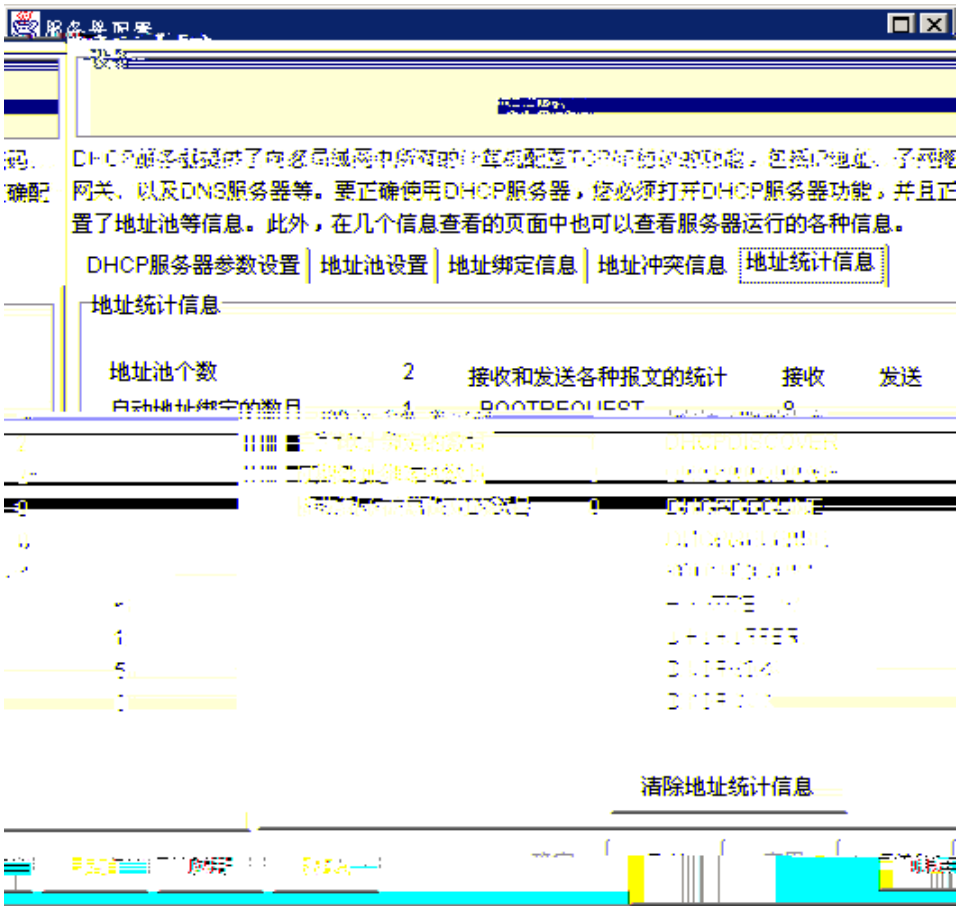
DHCP服务器参数设置
地址池设置
地址绑定信息
地址冲突信息
地址统计信息
地址绑定信息
清除地址绑定信息
取消
刷新

-
- “ ”

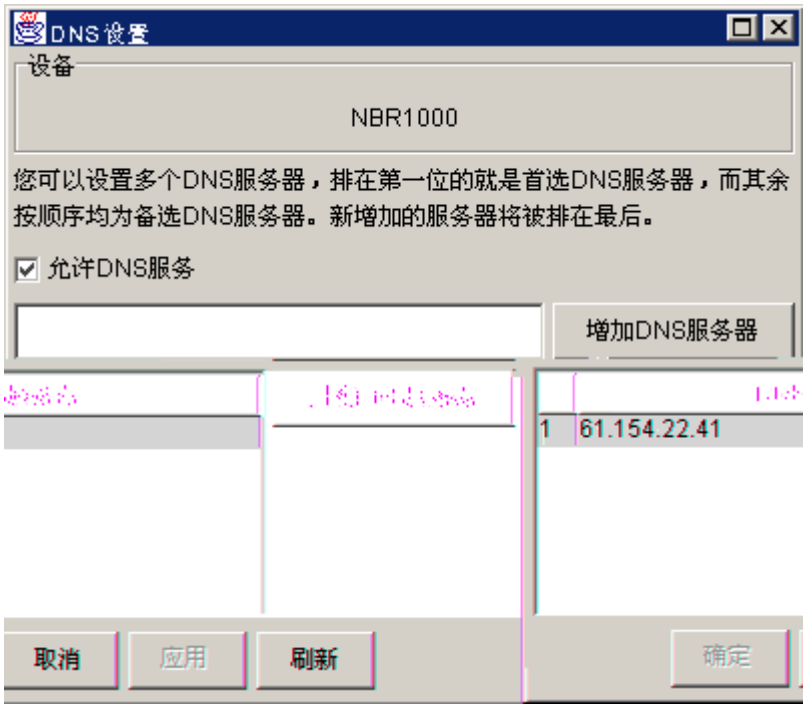


DHCP

- “ ”

4.2.3.6 DNS

“ /DNS ”



DNS DNS DNS ISP DNS DNS DNS DNS DNS DNS DNS

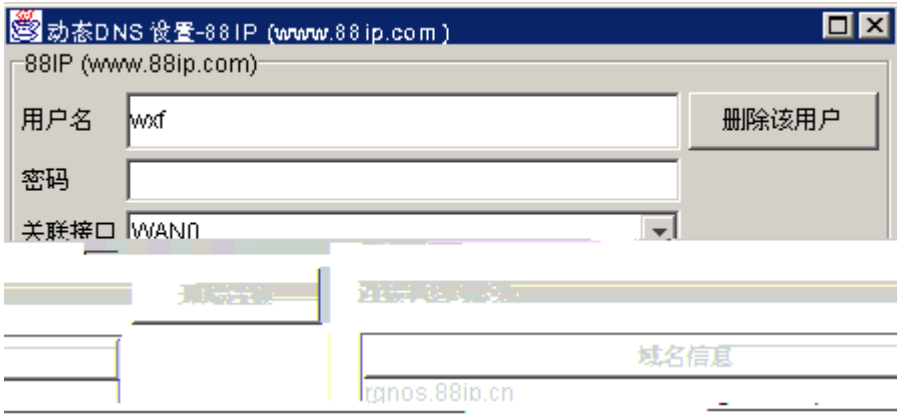
- **DNS** DNS DNS
- **DNS** DNS
- **DNS** DNS
- “ ” DNS
- “ ” DNS

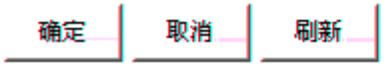
4.2.3.7 DNS

“ / DNS ”

DNS DNS

- “88IP” DNS
  “ ”
- “ ”



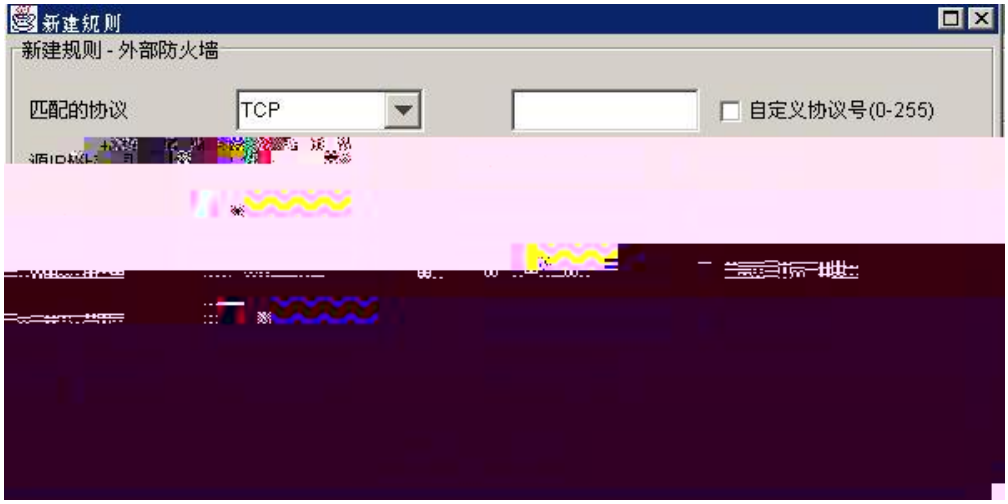


88IP **DNS** 88IP

4.2.3.8

“ / ”

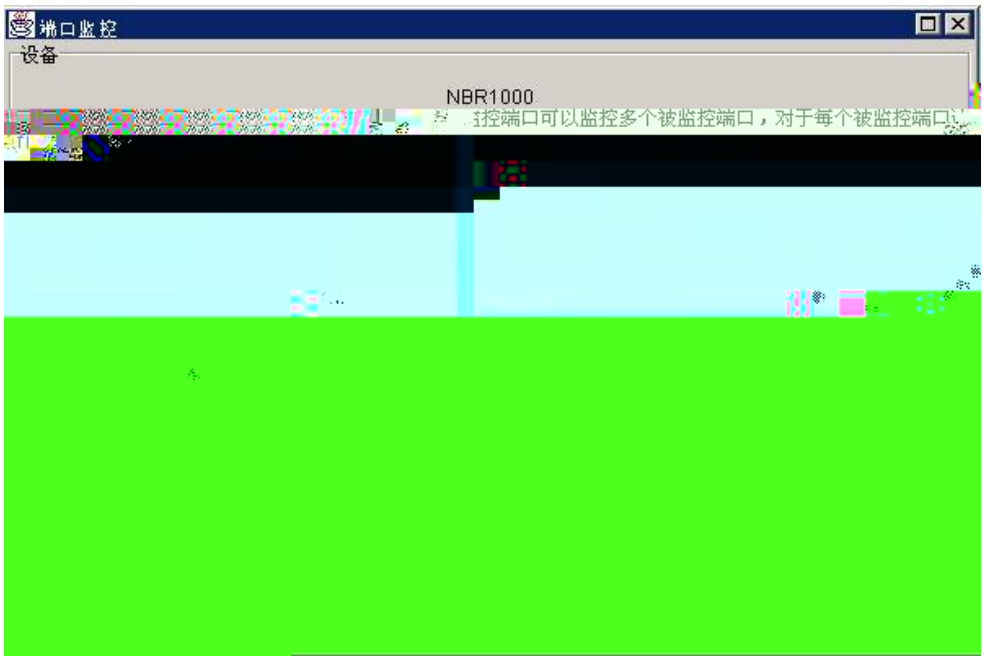
- **IP** IP
-
- **IP** ip IP
-
- IP IP
- tcp/ip
- “ ”
- “ ”
- “ ”
- “ ”



- : tcp/ip , , tcp/ip
- **ip** : ip ip ,
- : ,
- **ip** : ip ,
- : ,
- :
- :
- “ ”

4.2.3.10

“ / ”



, , lan1
lan2,lan3,lan0 , lan1 lan1 ,

- “ ”
- “ ”
- “ ”
- “ ”

4.2.3.11

“ / ”

NBR WEB Web 2.12

Web 2.0

4.2.3.18

“ / ”

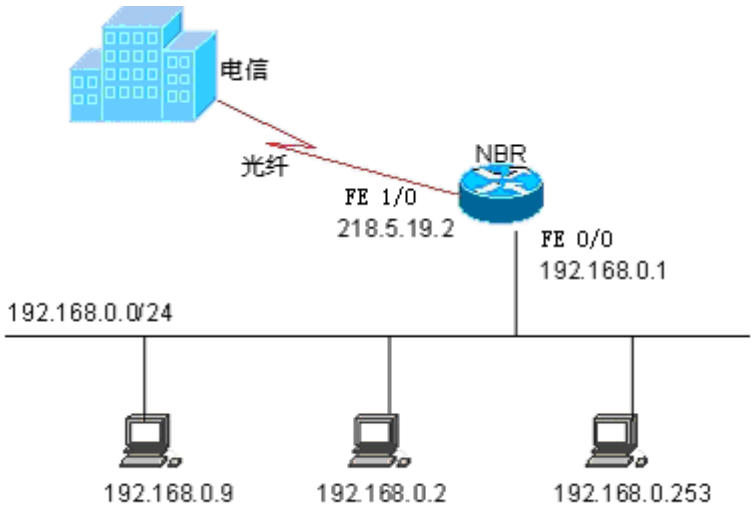
- **metal**
- **CDE/motif**
- **windows**

4.2.3.19

windows

4.39

61setern84s132B7C1>TJET EMC /P 4/MCID 8>BDC BT/F3 10.56 Tf1379027 2850 1 740.62 Tm0191385CD930C42[1185C1C6C0



4-1 IP

NBR

```
NBR>

NBR#

       ------------              ----------------

    ctrl-c                        '[]'



          :
                              [NBR]:
                                                  :
     telnet                                            :
     WAN       (1-     ,2 -     ,3-     ,         )[1]:

        internet   WAN   :
  0. WAN 0
  1. WAN 1
        (0 - 1)[0]:

           :
  1.     IP
  2. PPPoE
```

NBR

DNS (DNS):
[yes]:

LAN IP telnet LAN IP !

```
  NBR1#
Building configuration...
Current configuration : 1962 bytes

!
version 9.0 (building 1) for NBR
enable password 7 073f07221c1c
!
access-list 3198 deny tcp any any eq 135
access-list 3198 deny tcp any any eq 445
access-list 3198 permit ip any any
access-list 3199 deny icmp any any echo
access-list 3199 deny tcp any any eq 135
access-list 3199 deny tcp any any eq 445
access-list 3199 permit ip any any
access-list 99 permit any
dialer-list 1 protocol ip permit
mirror master lan 0 slave lan 3 all              NBR
!
!
!
service sequence-numbers
service timestamps debug datetime
service timestamps log datetime
no service password-encryption
!
interface FastEthernet 0/0                  NBR LAN0        interface
GigabitEthernet 0/0
 ip nat inside
 ip access-group 3198 in
 no ip redirects
 no ip mask-reply
 no ip proxy-arp
 ip address 192.168.0.1 255.255.255.0
 arp gratuitous-send interval 1 5
!
interface FastEthernet 1/0                  NBR WAN0        interface
GigabitEthernet 0/1
 ip nat outside
 ip access-group 3199 in
 no ip redirects
 no ip mask-reply
 no ip proxy-arp
 ip address 218.5.19.2 255.255.255.0
 duplex auto
 speed auto
!     NBR200/300  FastEthernet1/1             NBR  WAN1     interface
FastEthernet 0/2
interface FastEthernet 1/1
 duplex auto
 speed auto
 shutdown
!
```

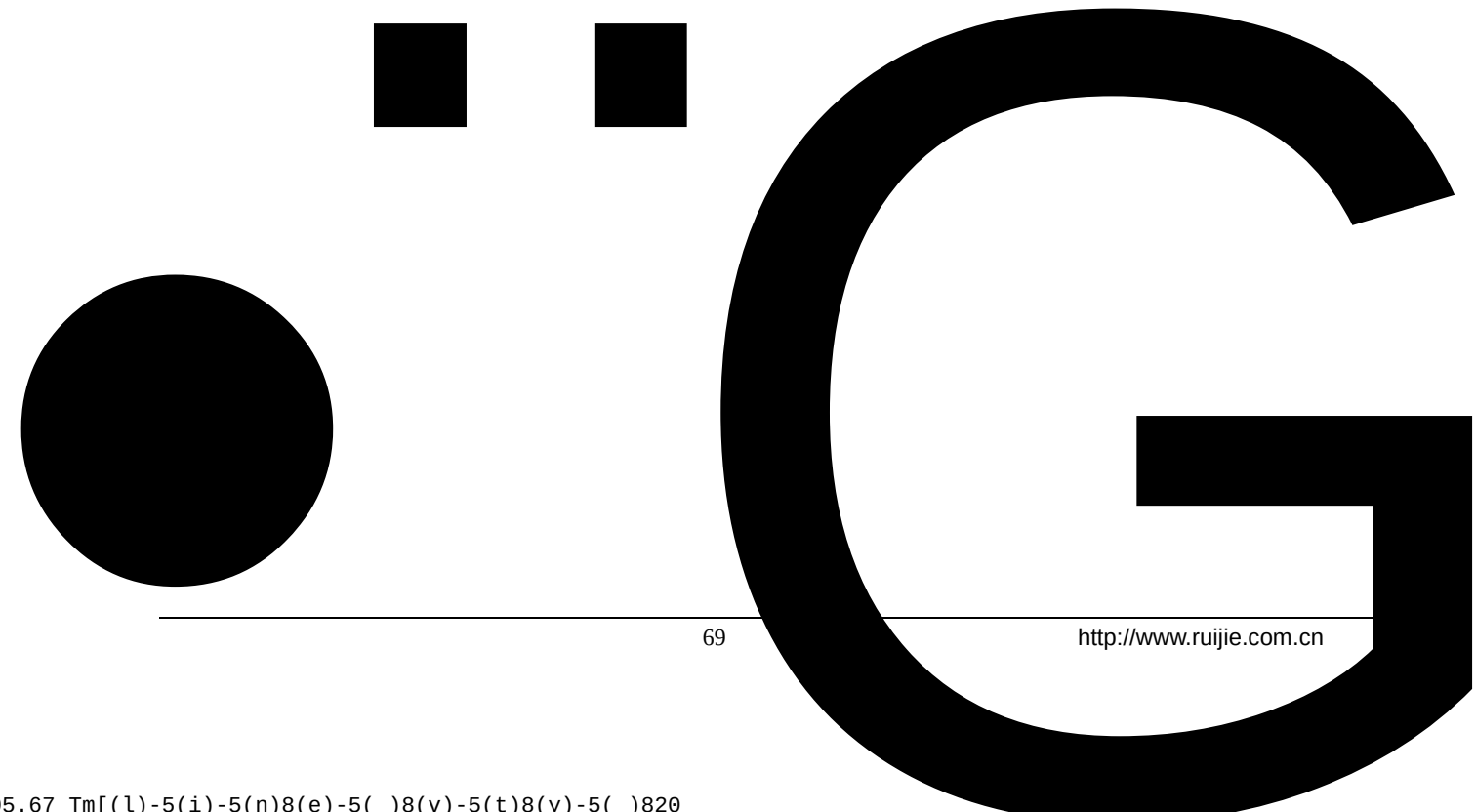
```
interface Null 0
!
ip nat pool nbr_setup_build_pool prefix-length 24
 address 218.5.19.2 218.5.19.2 match interface FastEthernet 1/0
!
ip nat inside source list 99 pool nbr_setup_build_pool
ip nat translation max-entries 7000
ip nat translation per-user 0.0.0.0 350
ip nat translation udp-timeout 150
ip nat translation icmp-timeout 30
ip nat translation tcp-timeout 600
ip nat translation finrst-timeout 20
ip nat translation dns-timeout 30
security anti-wan-attack level high
security anti-lan-attack
!
ip route 0.0.0.0 0.0.0.0 FastEthernet 1/0 218.5.19.1
!
line con 0
line vty 0
 login
 password 7 110022081d5e0834012e3e
line vty 1
 login
 password 7 072c06221a062210014f1f
line vty 2
 login
 password 7 093d101f2811175f1e2400
line vty 3
 login
 password 7 050a03330c3b1007340000
line vty 4
 login
 password 7 08112a181d330007590833
!
```

4.3.2 PPPoE

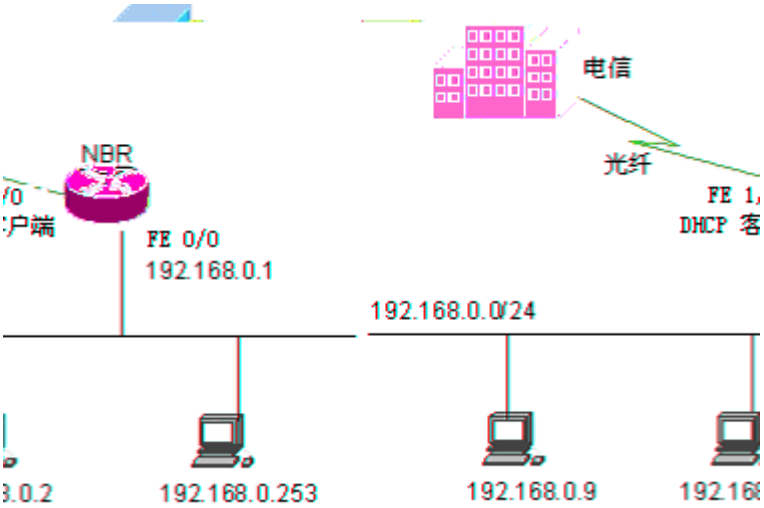
4-2 ADSL Internet ADSL Modem RJ-45

```
   access-list 3199 deny icmp any any echo
   access-list 3199 deny tcp any any eq 135
   access-list 3199 deny tcp any any eq 445
   access-list 3199 permit ip any any
   access-list 99 permit any
   dialer-list 1 protocol ip permit
   !
   !
   service sequence-numbers
   service timestamps debug datetime
   service timestamps log datetime
   no service password-encryption
   !
   interface  FastEthernet  0/0                NBR  LAN0         interface
GigabitEthernet 0/0
    ip nat inside
    ip access-group 3198 in
    no ip redirects
    no ip mask-reply
    no ip proxy-arp
    ip mtu 1488
    ip address 192.168.0.1 255.255.255.0
    arp gratuitous-send interval 1 5
   !
   interface  FastEthernet  1/0                NBR  WAN0         interface
GigabitEthernet 0/1
    no ip redirects
    no ip mask-reply
    no ip proxy-arp
    pppoe enable
    pppoe-client dial-pool-number 1 no-ddr
    duplex auto
    speed auto
   !      NBRM27 Tm[(M27 Tm[(M27 Tm[/F3 8.52 TF3 /.523/F3 8.52 TF3 76.54 591.1 Tm[(i)8
```

```
 address interface dialer 0 match interface dialer 0
!
ip nat inside source list 99 pool nbr_setup_build_pool
ip nat translation max-entries 7000
ip nat translation per-user 0.0.0.0 350
ip nat translation udp-timeout 150
ip nat translation icmp-timeout 30
ip nat translation tcp-timeout 600
ip nat translation finrst-timeout 20
ip nat translation dns-timeout 30
security anti-wan-attack level high
security anti-lan-attack
!
ip route 0.0.0.0 0.0.0.0 dialer 0
!
line con 0
line vty 0
 login
 password 7 04220b0(. Tm )8(0)-5(4)8(2)-5(2)8(0)-5 5928( )] TJETBT12.22 568.75 T717
```



105.67 Tm[(l)-5(i)-5(n)8(e)-5( )8(v)-5(t)8(v)-5( )820



4-3 DHCP IP

NBR

```
NBR >

    NBR#setup

          ------------              ----------------

       ctrl-c                        '[]'


            :
                                  [NBR]:
```

(1 - 3600)[1]:
1 (1 -100)[5]:

[no]: NBR

[yes]:
[yes]:

:
1.
2.
3.
(1 - 3)[3]:
[yes]:
WAN ping [no]:
IP [no]:

DNS (DNS)[no]:

:
:
:admin
telnet :remoteuser
:
WAN 0: DHCP IP.
: 100 Mbps
:
: 192.168.0.1 255.255.255.0
ARP: 1 Seconds
:
:
:

```
access-list 3199 deny tcp any any eq 445
access-list 3199 permit ip any any
access-list 99 permit any
dialer-list 1 protocol ip permit
!
service sequence-numbers
service timestamps debug datetime
service timestamps log datetime
no service password-encryption
!
interface FastEthernet 0/0             NBR LAN0      interface GigabitEthernet 0/0
 ip nat inside
 ip access-group 3198 in
 no ip redirects
 no ip mask-reply
 no ip proxy-arp
 ip address 192.168.0.1 255.255.255.0
 arp gratuitous-send interval 1 5
!
interface FastEthernet 1/0             NBR WAN0      interface GigabitEthernet 0/1
 ip nat outside
 ip access-group 3199 in
 no ip redirects
 no ip mask-reply
 no ip proxy-arp
 ip address dhcp
 duplex auto
 speed auto
!      NBR200/300   FastEthernet 1/1              NBR WAN1      interface FastEthernet
0/2
interface FastEthernet 1/1
 duplex auto
 speed auto
 shutdown
!
interface Null 0
!
!
ip nat pool nbr_setup_build_pool prefix-length 24
 address interface FastEthernet 1/0 match interface FastEthernet 1/0
!
ip nat inside source list 99 pool nbr_setup_build_pool
ip nat translation max-entries 7000
ip nat translation per-user 0.0.0.0 350
```

```
ip nat translation udp-timeout 150
ip nat translation iTdp
```

5.1

Stauts

Stauts Stauts

-
-

a

Stauts

5.2

-
-

9600 8 1
VT100

5.3

4 LAN 4
LINK/ACT 100M WAN
RJ45 LAN 100M
LINK/ACT
MODULE LINK/ACT

LINK/ACT		1 2 3 4
100M	100M 10M	1 2 10M
MODULE		1 2
Reset	5 5	2 5 3

NBR

WAN IP

PPPoE NAT

IP Internet

NBR

Setup

NBR RGNOSx.x

RGNOSx.x x.x 8.1 8.2

6.1 WAN

WAN

duplex speed WAN

duplex no

Red-Giant(config-if)# **duplex** {**full** | **half** | **auto**}	
Red-Giant(config-if)# **no duplex**	**auto**

speed no

Red-Giant(config-if)# **speed** {**10** | **100** | **auto**}	
Red-Giant(config-if)# **no speed**	**auto**

dulpex speed

Dulpex	**speed**	
Full		

MAC

MAC

MAC

MAC

IP IP IP

IP

Red-Giant(config-if)# **ip unnumbered** *interface-type interface-number*	
Red-Giant(config-if)# **no ip unnumbered**	

RGNOS DHCP

Red-Giant(config-if)# **ip address dhcp**	DHCP
Red-Giant(config-if)# **no ip address dhcp**	DHCP

6.2.2 (ARP)

RGNOS к ɔ

RGNOS 1).
2).UDP 3). IP

IP IP IP
172.16.16.255

IP

ReD-19aD 19nt(config-if)#**ip directet -broadcast** [*access-list-number*]	
ReD-19aD 19nt(config-if)#**no ip directet -broadcD 19ast**	

UDP IP
BOOTP UDP

IP (Helper)
HeD 19lpD 19er UDP
BOOTP UDP

ReD-19aD 19nt(config-if)#**ip hD 19elpD 19er-aD 19ddress** *ip-address*	UDP IP DHCP
ReD-19aD 19nt(config-if)#**no ip helper-aD 19ddress** *ip-address*	UDP IP

“ 1 ” 2D 1955.2D 1955.255.255

2D 1955.2D 1955.255.255

NBR(config-subif)# **no encapsulation dot1Q** [*VLANID*]	

LAN IEEE 802.1Q LAN vlan

Nbr(config)#ip route 0.0.0.0 0.0.0.0 fastethernet 1/0 192.168.12.1

Nbr(config)#end

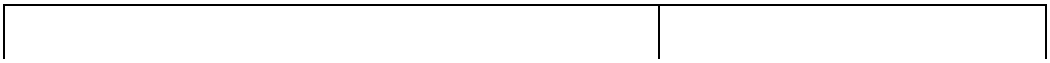
Nbr#

6.4

(access control lists) (access lists)

6.4.1

1). 2).



Red

-
-

6.5.1

1). PPPOE 2). C

Red-Giant(config-if)#**encapsulation ppp**	PPP
Red-Giant(config-if)#**mtu** *mtu-number*	
Red-Giant(config-if)#**dialer-group** *dialer-group-number*	dialer-list
Red-Giant(config-if)#**ppp pap sent-username** *username* **password** *password*	PAP
Red-Giant(config-if)#**ppp chap hostname** *username*	CHAP
Red-Giant(config-if)#**ppp chap password** *password*	CHAP

🕮

MTU 1492(1488 1488 1492)

ISP MTU ISP( )
MTU 1488 ISP MTU 1492

6.5.3

PPPoE 1).
2). (NAt) PPPoE
PPPoE

Red-Giant(config)#**dialer-list** *number dialer-group* **protocol** *protocol-name* {**permit** | **deny** | **list** *access-list*	

6.6.1 NAT

NAT IP

IP

6.6.2 NAPT

NAT

NAPT( )

NAPT NAPT NAPT NAPT

NAT

NAPT

NBR

6.6.4 TCP

TCP TCP
NAT TCP NAT
TCP

Red-Giant(config)#**ip nat pool** *address-pool start-address end*	

6.6.6 nat pc

nat ip inbound outbound , nat ip

Red-Giant(config)# ip nat translation **net-flow**	nat ip
Red-Giant(config)# ip nat translation **net-flow time** *seconds*	60 300 60 1

6.6.7 nat pc

nat ip inbound outbound , nat ip

Red-Giant(config)# ip nat translation **rate-limit default inbound** *Kbit* **outbound** *Kbit*	nat ip host Kbit 10Kbit 100000Kbit
Red-Giant(config)# ip nat translation **rate-limit ip** *x.x.x.x* **inbound** *Kbit* **outboud** *Kbit*	nat ip host Kbit 10Kbit 100000Kbit
Red-Giant(config)# ip nat translation **rate-limit iprange** *downip upip* **inbound** *Kbit* **outbound** *Kbit*	nat ip Kbit 10Kbit 100000Kbit
Red-Giant# show ip nat translations **flowrate inbound/outbound**	nat ip host 1 inbound outbound inbound outbound

nat nat

nat nat

📖

ip ip

100

6.6.8 NAT

-
-
-
- TCP
- NAT outside
- NAT

6.6.8.1

NAT net200

200.168.12.2~200.168.12.100 1

NAT

```
!
interface FastEthernet 0/0
 ip address 192.168.12.1 255.255.255.0
 ip nat inside
!
interface FastEthernet 1/0
 ip address 200.168.12.1 255.255.255.0
 ip nat outside
!
ip nat pool net200 200.168.12.2 200.168.12.100 netmask 255.255.255.0
ip nat inside source list 1 pool net200
!
access-list 1 permit 192.168.12.0 0.0.0.255
```

6.6.8.2

NAPT RGNOS8.1 NAT

NAPT NAT net200

200.168.12.200 IP

1 NAT

```
!
interface FastEthernet 0/0
 ip address 192.168.12.
```


4 650018514918211Tm[()]5(5JET5A0013386>>BD8(B0456510(25-537)885Tm50.T8(UJETU2ETBT1 0 0 1 502.9 315.6ETA3Tm[(4 650.02

```
 ip nat outside
!
ip nat pool net200 200.168.12.200 200.168.12.200 netmask 255.255.255.0
ip nat inside source list 1 pool net200
access-list 1 permit 192.168.12.0 0.0.0.255
```

NAT

```
Red-Giant#
Pro Inside global     Inside local      Outside local     Outside global
tcp 200.168.12.200:2063 192.168.12.65:2063 168.168.12.1:23 168.168.12.1:23
```

6.6.8.3 NAPT

NAPT NAT

NBR NAPT

NBR

WEB 192.168.12.3 IP200.198.12.1

80

```
!
interface FastEthernet 0/0
 ip address 192.168.12.1 255.255.255.0
 ip nat inside
!
interface FastEthernet 1/0
 ip address 200.198.12.1 255.255.255.0
 ip nat outside
!
ip nat inside source static tcp 192.168.12.3 80 200.198.12.1 80
```

WEB 192.168.12.3

NAT

IP NAPT

permit-inside

```
!
interface FastEthernet 0/0
 ip address 192.168.12.1 255.255.255.0
 ip nat inside
 no ip redirects
!
interface FastEthernet 1/0
 ip address 200.198.12.1 255.255.255.0
 ip nat outside
!
ip nat inside source static tcp 192.168.12.4 7777 200.198.12.1 7777
```

IP200.198.12.1 192.168.12.4

inside no ip redirects inside

6.7

6.6.8.4

192.198.12.0/24

```
!
```

NAT

```
Red-Giant#
Pro Inside global   Inside local    Outside local          Outside global
tcp 10.10.10.100:23 10.10.10.2:23  100.100.100.100:1178 100.100.100.100:1178
tcp 10.10.10.100:23 10.10.10.3:23  200.200.200.200:1024 200.200.200.200:1024
```

6.6.8.6 (DNS relay)

NAT NAT DNS NAT inside IP DNS NAT inside DNS DNS DNS

DNS relay

NAT inside IP 192.168.1.1 DNS IP 202.101.98.55 DNS relay

```
!
access-list 1 permit 192.168.1.0 0.0.0.255
!
```

!

! ACL internet

access-list 99 permit 192.168.0.0 0.0.0.255

! dialer-list PPPoE

dialer-list 1 protocol ip permit

!

! NBR1000 LAN

interface FastEthernet 0/0

ip mtu 1488

```
 ppp pap sent-username user password 7 072b102a07
 ip nat outside
 mtu 1488
 ip address negotiate
 dialer pool 2
 dialer idle-timeout 1200
 dialer-group 1
!      1M          Kbits
 bandwidth 1000
!
!      NAT                  NAT          outside          outside        FastEthernet  1/0
      218.5.19.2              outside       dialer 1     PPPoE                        dialer

ip nat pool nbr_setup_build_pool prefix-length 24
 address 218.5.19.2 218.5.19.2 match interface FastEthernet 1/0
 address interface dialer 1 match interface dialer 1
!      NAT
ip nat inside source list 99 pool nbr_setup_build_pool
!                          WAN
ip route 0.0.0.0 0.0.0.0 FastEthernet 1/0 202.101.98.1
ip route 0.0.0.0 0.0.0.0 dialer 1
!
```

6.6.8.8 NAT

nat pc ip

```
!
interface FastEthernet 0/0
 ip address 192.168.210.190 255.255.255.0
 ip nat inside
!
interface FastEthernet 1/0
 ip address 192.168.100.150 255.255.255.0
 ip nat outside
!
ip nat inside source list 1 interface FastEthernet 1/1
!
ip nat translation netflow
!
access-list 1 permit any
!
```

nat pc ip

ip 192.168.210.120 ip

```
!
interface FastEthernet 0/0
 ip address 192.168.210.190 255.255.255.0
 ip nat inside
!
interface FastEthernet 1/0
```

```
 ip address 192.168.100.150 255.255.255.0
 ip nat outside
!
ip nat inside source list 1 interface FastEthernet 1/1
!
ip nat translation rate-limit default inbound 1600 outbound 2400
!
ip nat translation rate-limit ip 192.168.210.120 inbound 4000 outbound 4000
!
access-list 1 permit any
!
```

show

```
Red-Giant#sh ip nat translations flowrate inbound
IP    Inbound(Kb/sec)     Outbound(Kb /sec)     IsLimit     IsSpecial
192.168.210.120          3         146     *     *
192.168.210.123          0           0     *     *
192.168.210.121          0           0     *     *
192.168.210.119          0           0     *     *
192.168.210.122          0           0     *     *
```

IsLimit “ * ” ip “ - ”

```
Red-Giant>

Red-Giant#
Enter configuration commands, one per line.  End with CNTL/Z.
!    WAN0
Red-Giant(config)#interface fastethernet 1/0
!    WAN
Red-Giant(config-if)#ip address 218.5.19.2 255.255.255.0
!    WAN            Internet
Red-Giant(config-if)#ip nat outside
!    WAN
Red-Giant(config-if)#no shut
!
Red-Giant(config-if)#end
Red-Giant#
!                        WAN         UP    (        ).
%LINK CHANGED: Interface FastEthernet 1/0, changed state to up
%LINE  PROTOCOL  CHANGE:  Interface  FastEthernet  1/0,  changed  state  to
UPRed-Giant#
Enter configuration commands, one per line.  End with CNTL/Z.

Red-Giant(config)#i

Red-Giant(config-if)#ip address 192.168.0.1 255.255.255.0
6 Ц

Red-Giant(config-if)#

Red-Giant(config-if)#
Red-Giant(config-if)#
Red-
```

```
Red-Giant(config)#
Red-Giant(config-line)#
Red-Giant(config-line)#
Red-Giant#
Red-Giant#
Enter configuration commands, one per line.  End with CNTL/Z.
Red-Giant(config)#

Red-Giant(config)#
NBR(config)#
NBR#
!
NBR#write
Building configuration...
[OK]
NBR#
!
NBR#show running-config
Building configuration...
Current configuration:
!
!
```

6.8 (DDNS)

Internet IP
Internet IP
Internet IP

IP
IP IP
Internet
IP

Wan DDNS NAT
Internet

DDNS 88IP(www.88ip.cn)

NBR(config)#**no ddns {88ip }** *usenam*	DDNS

DDNS DNS

NBR(config-ddns)# **ip domain-lookup**	DNS
NBR(config-ddns)# **ip name-server** 20 .101.98.55	DNS server

2 DDNS

DDNS

	show DDNS

NBR

1

6.9.2

6.9.3

6.10

7.1 ROM

7.1.1 ROM

BootROM RGNOS
BootROM
FLASH
BootROM RGNOS
BootROM
BootROM ROM ROM
BootROM RGNOS

7.1.2 ROM

BootROM FLASH RGNOS
Ɓ Ɓ

```
  4. X-Modem Download & Write Into File
  5. List Active Files
  6. List Deleted Files
  7. Run A File
  8. Erase A File
  9. Squeeze File System
  a. Format File System
  b. Other Utilities
```

Please select an item: **2** flash

File name[ ]: **router.bin**

Local IP[

```
  1. TFTP Download & Run
  2. TFTP Download & Write Into File
  3. X-Modem Download & Run
  4. X-Modem Download & Write Into File
  5. List Active Files
  6. List Deleted Files
  7. Run A File
  8. Erase A File
  9. Squeeze File System
  a. Format File System
  b. Other Utilities

Please select an item:
File name[          ]:
Local IP[               ]:                      ip
Remote IP[               ]:                tftp        ip
Read Mac Addr from eeprom =00-D0-F8-0F-C2-02

               %Now Begin Download File debug.bin From 192.168.210.109

send download request.!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!
        %Mission Completion. FILELEN = 3558528

Red-Giant Operating System Software
RGNOS (tm) RELEASE SOFTWARE, Version 8.1(neibu) building 1
Copyright (c) 2004 by Red-Giant Network co.,Ltd
Compiled Jun  7 2004 13:21:37 by Lanjx

Red-Giant NBR1000 series NBR1000
Motorola Power PC processor with 16384K bytes of memory.
Processor board ID 00000001,with hardware revision 00000001

SDRAM: 16M
       Bank0: 00000000 - 00FFFFFF  16M

System power off accidentally last.
Parallel FLASH ID: 0000010F
       Size :512 KB
Serial FLASH ID: 0000ECE6
       Size :8192 KB
Init nand flash device information for NBR1000.


               pci information in the system
             =====================================
slot|seq|bus|int|dev|fun  start    end      config   devid   fbtb  name
 00  00  00  01  21  00  80001000 80001fff 8000a800 0020100b  1   Ethernet
 01  00  00  00  20  00  80000000 80000fff 8000a000 0020100b  1   Ethernet
```

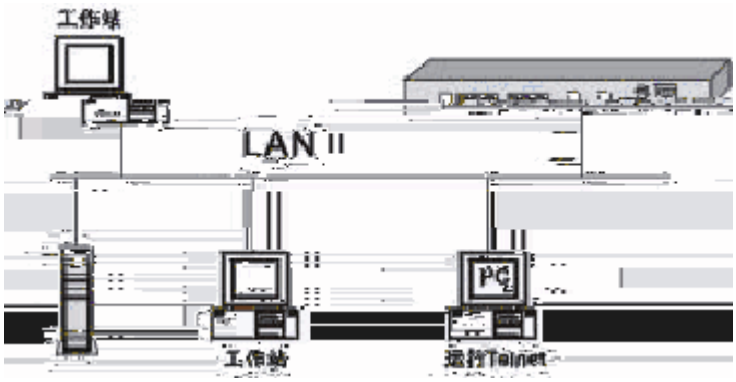
```
%INE PROTOCOL CHANGE: Interface dialer 0, changed state to DOWN
%INE PROTOCOL CHANGE: Interface dialer 1, changed state to DOWN
%INK CHANGED: Interface FastEthernet 1/1, changed state to administratively
down
%INK CHANGED: Interface FastEthernet 0/0, changed state to up
%INE PROTOCOL CHANGE: Interface FastEthernet 0/0, changed state to UP
NBR >
```

7.2

7.2.1

TFTP

TFTP COPY



4-1 Telnet

TFTP Server

IP IP

TFTP Server

Ping Ping

7.2.2

NBR rgnos.bin WEB index.htm vms15.htm WebClt.jar

RGNOS8.1 RGNOS8.2

TFTP

Red-Giant#copy tftp flash

```
Red-Giant#
Address or name of remote host []?                TFTP
Source filename []?                               TFTP
Accessing tftp://100.100.100.171/debug.bin...
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success : Transmission success,file length 2720256
Red-Giant #
Red-Giant #dir                                    RGNOS.bin          flash
Directory of flash:/
   3   an      68 0x64892209 Dec 29 2003 00:00:00 tftp_config.bin
   4   an  2720256 0x4c1467e3 Feb 17 2003 02:45:28 /RGNOS.bin
```

1 flash , RGNOS.bin, , RGNOS.bin, RGNOS.bin, bootrom

2 NBR Flash

Red-Giant#copy tftp update

```
SERVER2#
Address or name of remote host []?                TFTP
Source filename []?                               TFTP

The wired nand flash checking!It may take several minutes.
Sectors checking:  !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Sectors checking finish.
Accessing tftp://100.100.100.171/rgnos.upd...
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

Success : Transmission success,file length 4231312
Red-Giant #
```

7.3

PC

```
    config.text      2491   0xf043eb78  0xaf60d9d7  2037-01-09 21:31:46

Please press any key to continue.

Main Menu:

  1. TFTP Download & Run
  2. TFTP Download & Write Into File
```